

U.S. EPA TECHNICAL SUPPORT PROJECT BUSINESS SESSION SUMMARY

October 20-23, 2003
Holiday Inn Select Hotel
Niagara Falls, NY



Technical Support Project

U.S. EPA TECHNICAL SUPPORT PROJECT CO-CHAIRS

Engineering Forum:

Sharon Hayes, Region 1 • Gene Keeper, Region 6 • William Rothenmeyer, Region 8

Ground-Water Forum:

Richard Willey, Region 1 • Bernie Zavala, Region 10

Federal Facilities Forum:

Stacie Driscoll, Region 3 • Jim Kiefer, Region 8 • Chris Villarreal, Region 6

TABLE OF CONTENTS

| | |
|---|---------------|
| GROUND WATER FORUM | 2 |
| Acknowledgment of Work Conducted by the Ground Water Forum | 2 |
| Co-Chair Nominations | 2 |
| Spring Meeting 2004 | 2 |
| PCB Guidance and Comments | 2 |
| 1,4-Dioxane Paper | 2 |
| DNAPL Remediation and Characterization in a Fractured Media | 3 |
| DNAPL Characterization in Sediments—NAPL Removal | 4 |
| GWERD Issue Paper Updates | 5 |
| Work Group Updates | 6 |
| Supplemental Guidance for Environmental Indicators CA 750, Migration of Contaminated Groundwater Under Control: Groundwater-Surface Water Interactions | 6 |
| One Cleanup Program | 7 |
| 1,4-Dioxane Survey | 7 |
| DNAPL Fact Sheet | 7 |
| Innovative Technology Fact Sheet | 7 |
| Data Management | 7 |
| NAPL Cleanup Alliance | 8 |
| Long-Term Monitoring and Transport Optimization White Paper | 8 |
| Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers | 8 |
| Potential Performance Measures and Case Studies for Superfund Sites with Ground-Water Action | 8 |
| FEDERAL FACILITIES FORUM | 9 |
| Forum Business Overview | 9 |
| Updates from the Federal Facilities Restoration and Reuse Office | 9 |
| Co-Chair Nominations | 12 |
| FFF Issue Updates | 13 |
| Spring TSP Meeting and Other Events | 13 |
| Presumptive Remedies at Federal Facilities | 17 |
| Contaminated Sediments Guidance | 18 |
| OB/OD at RCRA Facilities | 18 |
| TSP Resources and Transfer of Information | 18 |
| Solvent Stabilizers as Emerging Contaminants of Concern | 19 |
| GPRA Measures and Cleanup Streamlining | 19 |
| FFF Meeting Summary | 19 |
| Innovation Technology Evaluation Program Review | 20 |
| ENGINEERING FORUM | 21 |
| RPM Expertise Questionnaire | 21 |
| Remedial Process Characterization Screening Data Collection Guidance | 22 |
| Outreach Efforts | 22 |
| Updating the RD/RA Handbook | 22 |
| Engineering Bulletins | 22 |
| Evergreen List of Technical Topics | 23 |

EF Expertise Contact List 23
Spring 2004 TSP Meeting 23
Technical Topics for EF Teleconferences 24
PARTICIPANTS LIST 25

GROUND WATER FORUM

Acknowledgment of Work Conducted by the Ground Water Forum

Co-chair Bernie Zavala (Region 10) acknowledged the following people for work they had done on behalf of the Ground Water Forum (GWF) since the Seattle meeting in April.

- Kevin Willis (Region 2), Kathy Davies (Region 3), Kay Wischkaemper (Region 4), Luanne Vanderpool (Region 5), Curt Black (Region 10) and the GWF Co-chairs for their work on the planning committee for the Fall 2003 TSP meeting.
- Bernie Zavala and Judy Canova (SC DHEC) for comments on *Groundwater Sampling and Monitoring with Direct Push Technologies* for Robert Hitzig (OSRTI).
- Kathy Davies for comments on ITRC's *Technical and Regulatory Guidance for Using Polyethylene Diffusion Bag Samplers to Monitor Volatile Organic Compounds* for George Nicholas (NJDEP).
- Dave Wilson (Region 5) for comments on *Proposed EPA Long-Term Monitoring Optimization White Paper* for Kathy Yager (OSRTI) and Dave Becker (USACE).
- Dick Willey (Region 1) for comments on *Supplement Guidance for Environmental Indication CA 750, Migration of Contaminated Groundwater Under Control: Groundwater-Surface Water Interactions* for Robert Maxey (OSW).
- Kay Wischkaemper for comments on draft directive *Ground-Water Remediation Optimization: Benefits and Approaches* for Charles Sands (OSRTI).

Co-Chair Nominations

Jeff Johnson (Region 7) was nominated for co-chair of the GWF. In accordance with the by-laws, the co-chairs are elected for a 2-year period. Voting for co-chair will take place prior to the December teleconference call, and the results will be announced during the December GWF call. Each Region is given two votes. Rich Steimle (OSRTI) reminded Forum members that whoever is elected co-chair should think about the goals they want to reach over the next two years and start planning accordingly.

Spring Meeting 2004

Rich Steimle said that Headquarters will choose the location—likely in the central part of the country (e.g., Chicago, St. Louis, Kansas City, Dallas)—for the Spring 2004 TSP meeting. The meeting will last 2-2.5 days and should only entail a workshop type setting for business and group discussions of projects the Forum members are involved in. There will be no speakers or field trips. Rich indicated that this new format will be tested and would be evaluated afterwards to determine if it should become the model for future two-day meetings.

PCB Guidance and Comments

Kay Wischkaemper mentioned that she and Ken Lovelace (OSRTI) have been commenting on the “migration to ground water” section of the PCB guidance. The GWF has already submitted formal comments on this guidance, but it is still being revised. Kay will forward her current comments to the GWF members and keep them updated on progress.

1,4-Dioxane Paper

Rich Steimle asked the GWF if the 1,4-dioxane white paper that Linda Fiedler is preparing is needed in the Regions. If so, in what form should it be provided? There was a general consensus that the Regions need information, but in a form more substantive than a fact sheet. The GWF felt that a technical white

paper, although useful, would not fill the Regions' needs. They said an OSWER Directive was needed that explains the 1,4-dioxane problem and the Agency's policy toward it.

Source Zone Treatment

EPA's Office of Research and Development (ORD) contracted with a group of experts to examine source zone treatment. They produced a draft document, *The DNAPL Remediation Challenge: Is There A Case For Source Depletion?* edited by Michael Kavanaugh and Suresh Rao, which concluded that insufficient information exists to determine whether or not source treatment is a viable approach. Rich Steimle distributed a table from a report that TetraTech produced showing sites where source removal was done and the regulatory authority was sufficiently satisfied with the remediation, requiring no further action. Rich will send the entire report to the GWF co-chairs, who will forward it to the work group (Kevin Willis, Glenn Bruck [Region 9], Judy Canova, Kathy Davies, René Fuentes [Region 10], Kay Wischkaemper, Ruth Izraeli [Region 2], and Jeff Johnson [Region 7]) to provide comments. The GWF asked Dave Burden (GWERD-Ada) to send them a copy of the Kavanaugh-Rao report when it is final, but before it becomes public.

DNAPL Remediation and Characterization in a Fractured Media

At Rich Steimle's request, Bill Brandon (Region 1) has been reviewing whether completed site characterizations sufficiently support the selected remedy. Bill studied two remedial demonstration sites in Region 1 and believes there was a mis-allocation of characterization resources. The number of borings is high around the perceived source area, but decreases with distance. The data do not appear to have been integrated as the borings were installed, so that a "living" conceptual model could be created to improve the placement of subsequent borings. Plume migration paths were not studied, so there is little information on where the steam or oxidants used in the remedies would migrate. Furthermore, while ground-water concentrations steeply fall off with distance in the "downgradient" direction, the actual flow direction(s) were not substantiated with hard data.

Bill summarized the three issues he identified with the site characterizations:

1) *Resource allocation issues:*

- Site-specific technology evaluations take place in the context of a site, but emphasis and resources are skewed excessively to the "technology" at the expense of prerequisite site characterization activities.
- The resources are directed primarily to source areas.

2) *Characterization and monitoring issues:*

- Downgradient plumes are incorrectly or incompletely delineated.
- Fracture pathways are not identified or are not understood completely.
- Monitoring networks installed within downgradient plumes are not optimized or validated with respect to fracture pathways.
- In relatively "well-characterized" source areas, knowledge of contaminant distribution (NAPL, aqueous, and solid phases) is incomplete.
- 3-dimensional hydraulic head fields are not understood.

3) *Implementation issues:*

- Injection-based technologies perturb the hydraulic head field gradients without a full understanding of the consequences.
- Synoptic water level or pressure head monitoring is absent or insufficient (real-time, time-series).
- Contaminants are potentially displaced by advection or other processes.

Bill recommended that bedrock characterizations require:

- Fracture identification (orientation, hydraulic properties, and interconnectivity);
- Plume delineation; and
- Measurement and presentation of hydraulic head field in three dimensions.

He also noted the need for guidance and protocols for integrating data and developing conceptual models for fractured bedrock sites. EPA needs to specifically articulate technical requirements and regulatory expectations for characterizing and remediating contamination in bedrock. Bill suggested establishing a series of test sites where remedial technologies can be evaluated at a national level in a well-characterized, controlled environment. In addition, other program vehicles should be made available for testing remedial technologies with longer monitoring time frames to evaluate the impact of source reduction on plumes.

Rich Steimle asked the GWF if they were interested in developing guidance on characterization and remediation of fractured rock that would address Bill's concerns. Kathy Davies volunteered to develop an outline for a guidance based on Region 3's approach that will be given to GWERD-Ada for further development.

Questions and Answers

Question: Why the emphasis on head distribution? Head characterization alone is not enough. The interconnectivity between borings must be determined so connected heads can be compared.

Answer: As a first step, head comparisons should be made. At many sites, at least in the upper portion of the bedrock, the fractures are connected and the head measurements will represent the flow gradient.

Comment: The need for straight head comparisons is very site dependent. At one site, the head comparisons supported an intuitive analysis that the water should flow in the direction indicated, but it subsequently proved to be incorrect. One needs to know interconnectivity, not just head values.

Question: What are the most successful techniques for determining interconnectivity?

Answer: Pumping tests in fractured rock and dye tests in karst.

DNAPL Characterization in Sediments—NAPL Removal

Steve Mangion (Region,1, ORD/HSTL) indicated that river bed sediments at the General Electric Housatonic site in Pittsfield, Massachusetts, are contaminated with oils containing PCBs. The sediments are saturated with NAPLs, which moved through the subsurface along a till layer to the Housatonic River. The selected remedy was to surround the area with sheet pile and excavate it. Steve pointed out that NAPL-contaminated sediments in humid climates, such as in the Eastern U.S., may not be as uncommon as thought.

Steve also discussed the remedy at the Pine Street Canal Superfund site in Burlington, Vermont. The site is a former manufactured gas plant that lies on the shores of Lake Champlain. There is a wide distribution of NAPL at the site, and continuous coring revealed NAPL in coarse stringers at depth on the lake side of the canal. The remedy for the canal, which as agreed upon by the responsible parties and the local community, was to construct a subaqueous cap over the "muck" on the sediments. Following execution of the remedy, NAPL seeps began to appear in the wetland area adjacent to the canal. It is suspected that NAPL also is penetrating the cap and re-contaminating the new canal sediment base. It appears that the cap may have compressed the NAPL in the muck and forced it into

the more permeable areas around the canal. While a problem with the remedy at other sites may not manifest itself quite as dramatically as it did at the Pine Street Canal site, Steve made the point that NAPL sites may require more frequent attention than a 5-year review.

The Forum members discussed this issue and concluded that NAPL sites are not the only potential problem sites and that a new mechanism other than a 5-year review might be needed to ensure that remedies are performing as designed.

Management Changes at Ground Water and Ecosystems Restoration Division (GWERD) in Ada, Oklahoma

Steve Schmelling is now the permanent division director of GWERD. Jerry Jones, Branch Chief of the Applied Research and Technical Support Branch of GWERD, is on detail to another branch for six months. David Jewett is the acting Branch Chief.

GWERD Issue Paper Updates

Dave Burden led the discussion on progress on the following issue papers.

- *Ground-Water Uncertainties Issue Paper*
(Work group members: Ruth Izraeli, Jeff Johnson, Bill O'Steen (Region 4), Luanne Vanderpool, Dick Willey, and Kay Wischkaemper)
The focus of this issue paper has changed from quantifying uncertainties in site characterization to describing and reducing them. The work group has commented on three drafts. Ruth Izraeli (Region 2) is working with Kelly Hurt (Dynamac), who has responded to the work group's written comments. Any work group member who wants to discuss Kelly's responses should contact him directly. Ruth anticipates a final draft to be ready within six months. Ruth will send the latest draft of the issue paper to Dick Willey, who will forward it to GWF members for review. Ruth indicated that she does not want a formal review, just a check to identify any major problems remaining in the issue paper.
- *Long-Term Monitoring of Natural Attenuation Issue Paper*
This issue paper is complete except for ensuring that it conforms to EPA guidance formatting. Ken Lovelace (OSRTI) mentioned that minor comments were received on the issue paper during the EPA all-office sign-off process.
- *Site Characterization for Monitored Natural Attenuation Issue Paper*
(Work group members: Curt Black, Bill Brandon, Ruth Izraeli, Herb Levine (Region 9), and Steve Mangion) Kelly Hurt indicated that the third draft of the issue paper should be finished by November 30th. Kelly will send a copy of the draft to the work group members for review.
- *Measurement of Field Parameters in Ground-Water Sampling Issue Paper*
(Work group members: Kathy Davies, Mark Henry [Michigan DNR], Brian Lewis [California DTSC], Steve White [USACE], Dick Willey, Kevin Willis, and Bernie Zavala)
This draft issue paper is currently out for external peer review. Bernie Zavala passed out CD-ROMs containing the final draft to the work group members and requested their comments by November 21st.
- *MNA of Inorganics in Ground Water*
(Work group: Kathy Davies [Chair], Bill Brandon, Jeff Johnson, Rich Muza (Region 8), Howard Orlean (Region 10), Steve White, and Bernie Zavala). Bob Puls (GWERD-Ada) plans to have the first draft of this paper ready for internal review in November 2003 and expects the first full draft to be ready for external review by June 2004. He will provide the work group copies of the internal draft when it is ready.

- *ORD Ground Water to Surface Water Issue Paper*
This issue paper is being prepared by Robert Ford (GWERD-Ada). Dave Burden will determine its status and report back to the GWF.

Work Group Updates

- *Evaluating Ground Water/Surface Water Transition Zones in Ecological Risk Assessment*
The Ecological Risk Assessment Forum (ERAF) has rewritten this issue paper, placing the section on ground-water in an appendix. Kathy Davies and René Fuentes (Region 10) will continue negotiating the final form of the paper with ERAF. When they receive an acceptable draft of the issue paper from ERAF, Kathy and René will distribute it to the GWF for review. Jonathan Williams (Region 10) volunteered to review the paper as an RPM and to talk with Bruce Duncan (ERAF lead).
- *Capture Zone Issue Paper*
Luanne Vanderpool indicated that the draft of this issue paper that was supposed to be sent to GeoTrans, Inc., was delayed because Herb Levine voiced objections to some of its content. The work group held a conference call on September 3rd that included GWERD staff to work out the differences of opinion. Herb volunteered to provide new language for the document. Luanne will e-mail a copy of Herb's suggestions to the work group for their review and comment. Once she receives the work group's comments, Luanne will incorporate them and submit the draft to GeoTrans. This additional comment period will delay the beta training.
- *Unified Statistical Guidance.* Guy Tomassoni (OSW) provided \$35,000 to complete the guidance. Mike Ganseki (Region 8) is the work assignment manager and has begun revising the draft. Howard Orlean volunteered to join the work group. Barbara Vertort-Tiffany (MI DEQ) noted the State of Michigan has an online statistical package that can be used to evaluate data.
- *ITRC Work Groups.*
 - ▶ Dick Willey reported that the diffusion sampler guidance is being revised to respond to review comments. It will be submitted to the states for their review soon.
 - ▶ Greg Lyssy (Region 6) reported that comments on the DNAPL characterization guidance have been incorporated, and it is ready for release.
- Judy Canova (SC DHEC) indicated that the guidance on performance monitoring for the assessment of source removal guidance will be reviewed by the ITRC workgroup in November. Then, it will be ready for outside review. The GWF discussed the pros and cons of a formal EPA review of the guidance. The topic of GWF review of ITRC documents will be an agenda item for the December GWF conference call.

Supplemental Guidance for Environmental Indicators CA 750, Migration of Contaminated Groundwater Under Control: Groundwater-Surface Water Interactions

The *Supplemental Guidance for Environmental Indicators CA 750, Migration of Contaminated Groundwater Under Control: Groundwater-Surface Water Interactions* is a guidance document that helps RCRA managers to quickly determine whether ground-water quality has impacted surface water at RCRA sites. If concentrations in monitoring wells near a surface water are less than 10 times the MCL or other regulatory limits, then for purposes of determining environmental indicators (EIs), the site has contained ground-water contamination if no other plume has been identified. It does not mean the ground-water contamination should be ignored, but that it is not severe enough to state that the EI has not been met.

Dick Willey suggested that the guidance needs another review. Howard Orlean pointed out that the RCRA policy is that ground-water/surface water interactions will not be addressed in this round of EI,

which was the position taken by industry. Ken Lovelace said that when the guidance is ready for senior OSW manager review, Bob Maxey (HQ OSW) has committed to send it to the GWF for a quick-turnaround review.

One Cleanup Program

Ken Lovelace indicated that the new objective of the administration is to get the stakeholders (other than EPA offices and the states) that are involved in cleanups to try to make the remedies for similar sites look similar. As a result, he and Guy Tomassoni put together a cross-program, ground-water task force to address some of these issues. The task force is currently working on options papers for how the value, use, and vulnerability of aquifers are treated in cleanup decisions, and how cleanup levels for DNAPL source areas are set. Once these option papers are completed, they will be posted on the One Cleanup Program website (<http://www.epa.gov/swerrims/onecleanupprogram/>). In addition to the ground-water task force, there are two other task forces on site assessment and long-term stewardship that have yet to meet.

1,4-Dioxane Survey

The GWF discussed the revised draft of the 1,4-dioxane survey that Brian Lewis (CA DTSC) and Tom Mohr (Santa Clara Valley Water District) prepared. They have incorporated comments the GWF submitted at the Spring 2003 TSP meeting Seattle. Based on the discussion, it was decided the GWF should change the survey structure to have EPA, rather than the State of California, collect the data from EPA staff. Andy Crossland (Region 2) agreed to incorporate GWF comments into the survey and send the revised survey to the GWF for a final review. The GWF also will consider whether having someone from Headquarters, such as Linda Fiedler (OSRTI), sponsor the survey will encourage better response. The survey and Linda's white paper on 1,4-dioxane (see page 2) will be a topic of the December 4th GWF teleconference. Tom noted that the Groundwater Resources Association of California is sponsoring a symposium entitled "1,4-Dioxane and Other Solvent Stabilizers in the Environment" in San Jose on December 10, 2003. More information on this workshop is available at <http://www.GRAC.org>.

DNAPL Fact Sheet

Kathy Davies indicated that the draft DNAPL fact sheet is in ORD peer review. The fact sheet is technical and provides formulas for calculations to determine if DNAPL could be present at a site. It also describes how to better delineate a DNAPL source area. Dave Burden will send a copy of the draft to Kay Wischkaemper, who will distribute it to those people who wish to review it.

Innovative Technology Fact Sheet

Ruth Izraeli reported that the first innovative technology fact sheet on recirculation wells is final, but she is not yet sure how it will be distributed. The GWF discussed whether it could prepare fact sheets on other innovative technologies. Rich Steimle offered to find out if OSRTI could produce additional fact sheets for review, rather than have GWF members spend time drafting them.

Data Management

Andy Crossland said the data management work group (which includes participants from six regions and Headquarters) is currently creating a data dictionary that is acceptable to all users. In the short term, the work group has been using the MEDD. There have been some minor problems with this format, so they are moving from a 2.0 version to a 2.1 version. More formats should be available on Region 2's website (<http://www.epa.gov/region02/superfund/medd.htm>) within a month. Region 2 has

started using the data management process for their CLP data. They have also migrated data to a STORET database with the next step being to see if it can be retrieved.

In response to a question, Andy indicated that Headquarters is not involved in mediating differences between the Regions on database formats. However, the work group has contacted Tony Jover, Director of Information Management and Data in OSWER for input.

NAPL Cleanup Alliance

Gregg Lyssy (Region 6) is preparing comments on the draft *NAPL Management Decision Framework* prepared by the NAPL Cleanup Alliance, which is one of the action groups of the Remedial Technologies Development Forum (RTDF). He will send his comments to GWF members when they are ready. Greg noted that the document is not technical and has a large section on initial stakeholder involvement and decision making.

Long-Term Monitoring and Transport Optimization White Paper

Bernie Zavala indicated that later in the year, Kathy Yager (OSRTI) would like to discuss GWF support of the white paper that OSRTI and USACE are preparing on long-term monitoring and optimization of pump and treat.

Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers

In May 2002, the Technology Innovation Office published *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers*, which was prepared by a GWF work group led by Bernie Zavala and Doug Yeskis. Since then, ASTM sent a letter of protest to EPA about this document since it did not reference ASTM standards. Bernie will send ASTM's comments to the work group and arrange a conference call to discuss how to address the comments.

Potential Performance Measures and Case Studies for Superfund Sites with Ground-Water Action GW Task Force (One Cleanup Program)

Ken Lovelace took the suggestions he received from the GWF and others and created a list of 30-40 performance measures. The Ground Water Task Force, which is now part of the One Cleanup Program is currently examining several case studies to see if there are different or better ways to judge accomplishments at sites undergoing remediation other than construction complete. Ken asked the GWF to identify candidate sites where there was sufficient data to show risk reduction, threats avoided, or other measurable benefits. Ken will send a memo to the GWF formally requesting case study sites. The memo will also include the current list of performance measures.

FEDERAL FACILITIES FORUM

Forum Business Overview

Federal Facilities Forum Co-Chairs Stacie Driscoll (Region 3), Chris Villarreal (Region 6), and Jim Kiefer (Region 8) provided an overview of the Federal Facilities Forum (FFF) business session agenda. Discussions began with a summary of the FFF's participation agreement, which members are requested to complete and forward to EMS, Inc.

Updates from the Federal Facilities Restoration and Reuse Office

FFRRO Director Jim Woolford summarized recent activities and strategies implemented by his office to address ongoing and new issues at federal facilities. He also clarified FFRRO staff assignments. Renee Wynn is expected to return to her position as FFRRO's Assistant Director in January 2004 after completing an OSWER job detail. Tracey Seymour continues to serve as FFRRO's liaison with the FFF. Regional FFF members were requested to maintain with FFRRO a steady exchange of information on federal facilities through the assigned FFRRO regional coordinator(s).

Post-ROD Agreements with DOD

FFRRO began working with the Navy this fall to ensure that EPA concerns were met in the Navy's new principles regarding post-ROD activities at sites with federal facility agreements (FFAs). Entitled *Principles and Procedures for Specifying Monitoring and Enforcement of Land Use Controls and Other Post-ROD Actions*, the statement of principles contains straightforward and detailed specifications that have already been used effectively in several EPA regions. The Army (and the Corp of Engineers) and Defense Logistics Agency agree to the Navy principles.

The Air Force, however, has not yet agreed to use the Navy principles. Instead, the Air Force intends to continue using a more general approach, as outlined in its *Principles of Agreement for Performance-Based Records of Decision in Environmental Restoration*. The Air Force maintains that essential actions such as institutional control (IC) implementation should be addressed in records of decision (RODs), while certain post-ROD documentation such as O&M plans should be excluded from and not enforceable through RODs.

As part of an effort to demonstrate an effective partnership between EPA and the DOD services, EPA plans to agree with the use of a dual-track, post-ROD approach for cleanup at DOD sites. EPA will evaluate the implementation of the Air Force principles on a site-by-site basis.

FFRRO plans to distribute to the regions a review package containing: (1) the Navy principles; (2) the Air Force Principles; (3) correspondence to EPA from Raymond DuBois (Deputy Under Secretary of Defense) in which DOD recognizes the Agency's support for the Navy principles and reservations on the Air Force principles; and (4) a related press release. Regional staff are asked to discuss the principles directly with Air Force counterparts, but are not required to concur with all aspects of the principles. The regions are encouraged to inform Woolford of any specific problems at Air Force facilities. Allison Abernathy (FFRRO) is available (at 703-603-0052) to answer other questions regarding post-ROD agreements with DOD.

Privatization

EPA is investigating cleanup enforcement mechanisms potentially applying to federal facility properties that have been privatized. The U.S. Department of Justice, as well as the Agency's

Brownfields Program legal staff, have determined that property transferees are not liable for past contamination problems or ongoing and future cleanup activities. As such, transferees are not subject to consent decrees. The Agency has determined, however, that potential enforcement mechanisms include memoranda of agreement (MOAs) and FFAs.

Several potential problem scenarios regarding privatization are under consideration within FFRRO and the regions. Of particular concern is the possibility of deeded property ownership reverting to a federal facility as a result of cleanup contractor error. In this case, it is unclear whether the federal facility resumes the role of lead agency for cleanup and whether EPA would continue to hold authority for remedy selection (as it would under private ownership).

Other problems at privatized sites have been posed by the use of fixed-price contracting, which often has resulted in inadequate site characterization, cleanup, and monitoring. The FFF is encouraged to inform Woolford of any problems associated with fixed-price cleanup contracts at military sites. Woolford will discuss the issues with DOD management, which may be unaware of site-specific problems. Although effective written guidance on fixed-price contracting was issued by the Army, field activities and decision-making often conflict with the guidance.

Reductions in cleanup budgets also pose existing or potential problems at sites undergoing privatization. Most notably, significant reductions in BRAC program appropriations has resulted in a 30% reduction in Army funding to EPA for regional assistance at BRAC sites. FFRRO supports any regional decisions to terminate involvement at BRAC sites due to funding shortages. Funding sources for the many DOD activities undertaken as part of the privatization process at non-BRAC sites is unclear.

Formerly Utilized Defense Sites

The Agency has nearly completed its national FUDS inventory, which is intended for use in negotiations among DOD and state agencies. To date, seven regions have submitted complete sets of site-specific information to Headquarters for CERCLIS integration. As required by Congress, all regional information will be incorporated in CERCLIS by the end of FY04. Josh Barber (FFRRO), who has been working with the Agency's FUDS Workgroup in this effort, is available at 703-603-0265 to answer questions on the FUDS inventory.

The Agency no longer participates in the Interagency FUDS Improvement Workgroup, but may renew its interagency participation in FUDS problem resolution through the newly-established FUDS Forum. Murray Newton (FFRRO) is available (at 703-603-8704) to discuss site-specific problems that may be addressed by the Forum.

The Army completed its final FUDS program manual earlier this year but the Office of the Secretary of Defense has detained issuance of the manual. Distribution of DOD documentation generally remains under close review in light of national security concerns. Questions regarding the availability or release of FUDS documentation should be referred to Sally Dalzell (202-564-2583) in the Federal Facilities Enforcement Office. EPA Headquarters recognizes the need for consistent regional guidance on FUDS documentation released under the Freedom of Information Act (FOIA).

Perchlorate-Contaminated Sites

The National Resources Defense Council (NRDC) submitted a FOIA request this fall for information on perchlorate-contaminated sites. Regional offices, FFRRO, and other Agency program offices have

completed information searches and the Office of Water is now preparing the Agency's response and supporting documentation. The NRDC's intended use of the information is unclear.

The National Academy of Science (NAS) has gathered experts to study the issues involved in determining a reference dose for perchlorate. In particular, NAS is investigating the validity of the EPA Office of Research and Development (ORD) proposed limit of 1 part per billion (ppb) for drinking water. Pending the results of the NAS study, which is expected to be released next summer, OSWER supports the use of a 4-18 ppb limit dependent upon site-specific conditions. The State of California anticipates promulgation of a perchlorate standard (likely 1-4 ppb) by January 2004. Florida and Massachusetts are also considering state standards. Summaries on perchlorate contamination and the various actions taken by EPA and other agencies to address the problem are available at www.cluin.org/perchlorate.

TCE Reassessment

The NAS also anticipates studying the issue of TCE contamination in the form of vapor intrusion into buildings. The study will include reassessment of ORD's current standards for TCE. OSWER will meet with OSHA to discuss the issue due to OSHA's regulatory authority for occupational buildings. It is possible that the guidance will refer users to the State of California's existing standards for TCE. The Technology Innovation Program is leading the Agency's efforts to address the issue and to coordinate assistance from other agencies such as the Council on Environmental Quality.

BRAC '05 List

Realignment and closure of additional military bases is expected under the BRAC Program during 2005. As part of the planning process, DOD will begin developing the closure list in Spring 2004. Estimating that it currently maintains a 25% excess capacity of facilities, DOD is considering using a "super-base" concept to consolidate the installations. The MOA providing DOD funds to EPA for regional involvement at BRAC sites will expire in 2005, and DOD will not provide further funding. DOD already has stopped funding regional work at non-NPL facilities. Continuing resolutions are underway in Congress to fund EPA's current work at BRAC sites.

Streamlining DOD Facility Cleanups

EPA is working with DOD through MOAs to determine how best to use existing tools for site cleanup and to understand why some tools may not be in use. This effort is integral to the Agency's new One Cleanup Program (OCP), which aims to improve the coordination, speed, and effectiveness of contaminated site cleanups. Tracey Seymour may be contacted at 703-603-8712 for streamlining updates and the results of ongoing discussion with DOD on this issue.

DOE Risk-Based End State Cleanup Project

DOE's new Risk-Based End State Cleanup Project uses a risk-based approach for planning, prioritizing, and assessing cleanup at DOE facilities. Under this initiative, EPA is working with DOE to develop a vision document describing the future use of DOE facilities, long-term remedy plans, and government/private party roles in long-term stewardship ("legacy management"). The document will include plans for addressing DOE waste disposal and transfer, which continue to concern state governments. In accordance with the risk-based approach, DOE field offices are developing variance reports that specify which FFAs require amendment and the nature of amendments. Monica McEaddy (FFRRO) may be contacted at 703-603-0044 for information on the vision document.

FFRRO Summary

FFF members raised additional concerns for discussion with Woolford.

- The Air Force intends to begin using performance-based FFAs in Region 2. Regional staff plan to discuss the approach with the Air Force but are unclear about the anticipated contents of the new FFAs. FFRRO recommends that regional enforcement staff be involved in FFA negotiations with the Air Force. EPA believes that the model FFA developed jointly by DOD and EPA in 1988 has been used effectively for the past 15 years.
- Integration of FFF activities with those of the Federal Facility Leadership Council (FFLC) needs improvement. Likely methods for improving the working relationship include FFF co-chair participation at FFLC meetings, participation in monthly teleconferences held by both groups, and distribution of FFLC updates to the full FFF. Regional management or designated staff are encouraged to participate in FFLC subgroup activities and OCP streamlining efforts. Integration also may be enhanced if the FFF alerts the FFLC of potential issues of concern for both groups, such as performance-based contracting, the role of environmental baseline surveys, and BRAC '05 property reuse plans (versus reopening of RODs).
FFRRO also encourages the FFF to become involved with American State and Territorial Solid Waste Management Officials (ASTWSMO). One opportunity for FFF involvement is provided by ASTWSMO's recently-completed BRAC '05 white paper, which FFRRO will distribute to the FFF for review and comment.
- DOD is revising its inventory of closed, transferred, and transferring (CTT) military ranges, as specified in DOD's CTT directive. EPA is working with the department to integrate the inventory into CERCLIS. The extent of information contained in the inventory is expected to be somewhat limited due to national security concerns.
DOD also is developing an internal ranking system for site cleanups. Sites with chemical weapon waste, which comprise less than 5% of the DOD cleanups and yet incur the highest costs, will be ranked highest.
- The Federal Facilities Esquires are examining the issue of cleanup liabilities at properties found suitable for transfer by DOD. FFRRO anticipates that the group's findings will help to establish model contract language that may be used in other federal facility property transfers. The issue arose at Lowry Air Force Base, where the Air Force transferred ownership of a property to a land developer who later discovered extensive asbestos contamination. Although EPA had objected, the contract for property transfer contained language specifying that DOD is not responsible for any asbestos contamination. Lowry now claims no cleanup responsibility, and the developer intends to sue the federal government.

Co-Chair Nominations

Nominations were taken for a FFF co-chair to replace Chris Villarreal (Region 6), who completed his two-year term. The role of co-chair involves:

- Coordinating and participating in monthly FFF teleconferences;
- Participating in bimonthly teleconferences among the three TSP forums;
- Planning and attendance at the annual Forum meetings held each spring;
- Planning and attendance at the annual TSP meetings held each fall;
- Attending and providing FFF updates at the FFLC meetings; and
- Attending National Association of Remedial Project Managers (NARPM) meetings (to the extent possible) and fostering FFF integration through subgroup participation, product development, and networking.

Based on the results of regional voting, Harry Craig (Region 10) was elected as the FFF's new co-chair, effective at the group's November teleconference.

FFF Issue Updates

The FFF reviewed the results of its recent "roundup" of issues, as reported during the group's September 2003 teleconference. Christine Williams (Region 1) added Region 1 issues that were not reported earlier: privatization of property at South Weymouth Naval Air Station, perchlorate contamination at the Massachusetts Military Reservation, and post-ROD FFAs. Regional and state issues identified during the semi-annual roundups are incorporated into the FFF's short- and long-term work agenda.

The FFF agreed that its working lists on outstanding issues, accomplishments, and points of contact require updating each six months. Members reviewed the current lists and submitted changes to Scott Marquess (Region 7) for integration (Tables 1 and 2). New issues include performance-based contracting, TCE vapor intrusion, and military munitions (including small arms firing ranges). Issues no longer of high priority include grain bin contaminants, vadose zone policy, and PCBs in paint. The issue of military munitions expanded to include open burn/open detonation (OB/OD) practices at RCRA Subpart X facilities, and the issue of BRAC sites expanded to include privatization and "dirty transfers." Lead contacts are requested to notify designated FFRRO staff of their roles and to maintain steady communications between the two groups.

Spring TSP Meeting and Other Events

The FFF investigated opportunities for scheduling its spring meeting in conjunction with other key groups working on federal facility issues. In response to past FFRRO requests for enhanced integration of the FFF in NARPM activities, the FFF elected to convene during the May 25-28, 2004, NARPM meeting in Miami, FL. A joint meeting would allow the FFF to assist NARPM in meeting planning and implementation. Assistance could include:

- Contributing to the FFRRO presentation;
- Facilitating panel sessions involving keynote speakers on federal facility topics;
- Providing technical or policy training; and
- Contributing DOD or DOE information for 2-4 breakout sessions.

The FFF co-chairs will offer to join upcoming FFRRO/NARPM discussions in order to pursue co-scheduling of the meetings and other joint efforts. The FFF anticipates that its regular business sessions could be held at times during which the NARPM agenda does not include federal facility topics. NARPM and FFF member Steve Hirsh (Region 3) will assist the co-chairs in pursuing these options. The FFF will investigate alternate locations and dates for the spring meeting in the event that a joint NARPM/FFF meeting cannot be held.

Other meeting and training venues in which FFF members may wish to participate or from which topical information may be obtained include the:

- Federal Facilities Leadership Council meeting in February 2004 in San Francisco, CA;

Table 1. Current Issues, Contacts, and Activities of the Federal Facilities Forum (October 2003)

| Issue | Contacts (<i>Lead</i>) | Accomplishments | Current Activities |
|-------------------------------|---|---|--|
| 1. FUDS | Region 7, <i>Scott Marquess</i> Region 6, Mike Overbay Region 5, Gene Jablonowski FFRRO, Murray Newton | <ul style="list-style-type: none"> ✓ Provided significant input to FFRRO on draft FUDS policy, with 2 Forum members serving as principal authors ✓ Reviewed Kansas and Ohio FUDS MAPs produced under EPA/Corps/state pilot | <ul style="list-style-type: none"> ◆ Assist in implementation of EPA FUDS Policy ◆ Provide input into FUDS inventory data parameters ◆ Review FUDS MAPs and participate in other FUDS pilot projects ◆ Advise forum of developments on DOD/ASTSWMO FUDS |
| 2. Military Munitions | Region 10, <i>Harry Craig</i> Region 5, David Seely Region 6, Mike Overbay Region 8, Jim Kiefer Region 3, Steve Hirsh FFRRO, Doug Maddox | <ul style="list-style-type: none"> ✓ Reviewed and commented on FFRRO's UXO draft policy and handbook | <ul style="list-style-type: none"> ◆ Develop UXO Training Course (will be given in Austin, Texas and Santa Fe, New Mexico) ◆ Continue assisting TIO in developing Internet training on analytical methods ◆ Develop SOW for Best Management Practices at OB/OD (Subpart X) facilities |
| 3. ICs/LTS | Region 3, <i>Stacie Driscoll</i> Region 1, Christine Williams Region 9, Glenn Kistner FFRRO, Allison Abernathy | <ul style="list-style-type: none"> ✓ Reviewed and commented on OSWER's ICs fact sheet ✓ Reviewed and commented on EPA's interim IC policy for active bases ✓ Assisted FFRRO in developing IC model language for decision documents | <ul style="list-style-type: none"> ◆ Comment on EPA draft final policy for ICs at active bases |
| 4. BRAC/ Land Transfer Issues | Region 6, Mike Overbay Region 9, Glenn Kistner Region 1, Christine Williams Region 5, David Seely Region 8, Judith McCulley | <ul style="list-style-type: none"> ✓ Participated in BRAC In Progress Reviews | <ul style="list-style-type: none"> ◆ Track Congressional and follow-on status of the Efficient Facilities Initiative ◆ Track BRAC program changes and update the Forum as needed |
| 5. Perchlorate | Region 6, <i>Chris Villarreal</i> Region 10, Harry Craig FFRRO, Josh Barber | <ul style="list-style-type: none"> ✓ Developed Perchlorate Training Module for the Federal Facilities Remediation Training. Presented training module in Dallas, TX (January 2003) and in Washington, DC (April 2003) | <ul style="list-style-type: none"> ◆ Working on the development of a soil and sediment collection and analytical method for perchlorate. |
| 6. Sediment | Region 8, <i>Judith McCulley</i> Region 4, Robert Pope | <ul style="list-style-type: none"> ✓ Reviewed and provided comments on EPA's sediment remediation "principles" | <ul style="list-style-type: none"> ◆ Review EPA sediment remediation guidance policy when issued ◆ Review Navy sediment policy when issued ◆ Review EPA sediment framework document |
| 7. Tribal Issues | [No one assigned] FFRRO, Trina Martynowicz | <ul style="list-style-type: none"> ✓ Submitted a request to Headquarters for RCRA sites to be added to the developing overlay of tribal properties | <ul style="list-style-type: none"> ◆ Track Headquarters roundtable discussions with tribes, states, and other agencies ◆ Coordinate Forum/FFRRO communications with Carol Bass |

| | | | |
|--|---|---|--|
| 8. DOE/ Radioactive Waste | Region 4, <i>Jim Barksdale</i> Region 5, Gene Jablonowski Region 9, Glenn Kistner FFRRO, Mike Carter | ✓ Organized Radiation Training at the Fall 2002 TSP Meeting | ◆ Track DOE program changes and update the Forum as needed |
| 13. NARPM Coordination | Region 4, <i>Robert Pope</i> Region 9, Glenn Kistner FFRRO, Tracey Seymour | ✓ Organized FF Panel for Spring 2003 NARPM Meeting ✓ Established process for Forum/NARPM sharing of information and resources | ◆ Continue providing Forum updates to NARPM ◆ Coordinate Forum/FFRRO participation with NARPM |
| 14. FFLC Coordination | <i>Forum Co-Chairs**</i> | ✓ Provided FFLC with information on Forum activities, issues, and points of contact | ◆ Coordinate activities |
| 15. ITRC Work Team Coordination: | | | |
| <i>UXO</i> | Region 10, <i>Harry Craig</i> Region 3, Steve Hirsh | ✓ Provided significant assistance in development of UXO training ✓ Served in ITRC chair person capacity | ◆ Continue assisting work team in development of UXO training |
| <i>Perchlorate in Ground Water</i> | Region 6, <i>Chris Villarreal</i> | ✓ Established contacts, shared general information with work team, and obtained information on ITRC's technology transfer efforts | ◆ Continue communication with work team |
| <i>DOE Gate 6 Technology</i> | Region 8, <i>Judith McCulley</i> | | ◆ Contact work team and identify team needs |
| <i>Long-Term Stewardship</i> | Region 5, Gene Jablonowski | | ◆ Contact work team and identify team needs |
| <i>Small Arms Firing Range</i> | [No one assigned] | ✓ Contacted work team and obtained information on ITRC development of two guidance documents | ◆ Continue communication with work team |
| <i>Contaminated Sediments</i> | Region 3, <i>Steve Hirsh</i> Region 8, <i>Judith McCulley</i> | ✓ Contacted work team leader | ◆ Continue communication with work team |

* Responsible for tracking related technical and policy issues, serving as points of contact for new information, bringing issues to the Forum for discussion when needed, and coordinating special projects such as data calls.

** Co-chairs are Stacie Driscoll (Region 3), Jim Kiefer (Region 8), and Harry Craig (Region 10)

**Table 2. Federal Facilities Forum: Issues and Lead Contacts
October 2003**

| Issue | Lead Contact(s) | Contact Information |
|---|--|--|
| 1. FUDS | Scott Marquess, Region 7 Mike Overbay, Region 6 Gene Jablonowski, Region 5 Murray Newton, FFRRO | marquess.scott@epa.gov, 913-551-7131 |
| 2. Military Munitions | Harry Craig, Region 10 David Seely, Region 5 Mike Overbay, Region 6 Jim Kiefer, Region 8 Steve Hirsh, Region 3 Doug Maddox, FFRRO | craig.harry@epa.gov, 503-326-3689 hirsh.steven@epa.gov, 215-814-3352 overbay.michael@epa.gov, 214 665-6482 |
| 3. ICs/LTS | Stacie Driscoll, Region 3 Christine Williams, Region 1 Glenn Kistner, Region 9 Allison Abernathy, FFRRO | driscoll.stacie@epa.gov, 215-814-3368 |
| 4. BRAC/Land Transfer Issues (including post-transfer issues) | Mike Overbay, Region 6 Glenn Kistner, Region 9 Christine Williams, Region 1 David Seely, Region 5 Judith McCulley, Region 8 | overbay.michael@epa.gov, 214-665-6482 |
| 5. Perchlorate | Chris Villarreal, Region 6 Harry Craig, Region 10 Josh Barber, FFRRO | villarreal.chris@epa.gov, 214-665-6758 |
| 6. Sediment | Judith McCulley, Region 8 Robert Pope, Region 4 | mcculley.judith@epa.gov, 303-312-6667 |
| 7. Tribal Issues | | |
| 8. DOE/Radioactive Waste | Jim Barksdale, Region 4 Gene Jablonowski, Region 5 Glenn Kistner, Region 9 Mike Carter, FFRRO | barksdale.james@epa.gov, 404-562-8537 |
| 9. Vapor Intrusion | Judith McCulley, Region 8 Jim Kiefer, Region 8 Murray Newton, FFRRO | kiefer.jim@epa.gov, 303-312-6907 |
| 10. Performance-Based Contracting | Scott Marquess, Region 7 | marquess.scott@epa.gov, 913-551-7131 |
| 11. GPRA | Tracey Seymour, FFRRO | seymour.tracey@epa.gov, 703-603-8712 |
| 12. NARPM Coordination | Robert Pope, Region 4 Glenn Kistner, Region 9 Tracey Seymour, FFRRO | pope.robert@epa.gov, 404-562-8506 |

| | | |
|------------------------------------|---|---|
| 13. FFLC Coordination | Forum Co-Chairs: Stacie Driscoll, Region 3 Jim Kiefer, Region 8 Harry Craig, Region 10 | driscoll.stacie@epa.gov, 215-814-3368 kiefer.jim@epa.gov, 303-312-6907 craig.harry@epa.gov, |
| 14. ITRC/Work Team Coordination: | | |
| <i>UXO</i> | Harry Craig, Region 10 Steve Hirsh, Region 3 | craig.harry@epa.gov, 503-326-3689 hirsh.steven@epa.gov, 215-814-3352 |
| <i>Perchlorate in Ground Water</i> | Chris Villarreal, Region 6 | villarreal.chris@epa.gov, 214-665-6758 |
| <i>DOE Gate 6</i> | Judith McCulley, Region 8 | mcculley.judith@epa.gov, 303-312-6667 |
| <i>Long-Term Stewardship</i> | Gene Jablonowski, Region 5 | jablonowski.eugene@epa.gov, 312-886-4591 |
| <i>Small Arms Firing Ranges</i> | [No one assigned] | |
| <i>Contaminated Sediments</i> | Judith McCulley, Region 8 | mcculley.judith@epa.gov, 303-312-6667 |

- EPA “National Superfund Radiation Training Conference” in (January or February) 2004 in Las Vegas, NV, for which the tentative agenda includes technical presentations, a site visit to Area 51, and a tour of the ORD laboratory (more information is available from Gene Jablonowski (Region 5) at 312-886-4591);
- ESTCP “Partners in Environmental Technology Symposium and Workshop” on December 2-4, 2003, in Washington, DC (www.estcp.org);
- Battelle/NAVFAC “Sustainable Range Management Conference” on January 5-8, 2004, in New Orleans, LA (www.battelle.org);
- “UXO/Countermining Forum” conference on March 9-12, 2004, in St. Louis, MO (www.theforum2004.com);
- ITRC training sessions, team activities, and work products, including the document *Characterization and Remediation of Soils at Closed Small Arms Firing Ranges* to be released in January 2004, and materials on topics such as historical record review and geophysical prove-outs (www.itrcweb.org); and
- Environmental Institute training sessions (www.enviro-institute.com).

Presumptive Remedies at Federal Facilities

Glenn Kistner (Region 9) provided an update on the potential use of presumptive remedies at McClellan Air Force Base in California. EPA historically has requested the Air Force to attain maximum cleanup levels and to employ few ICs at McClellan. More recently, Region 9 began working with the Air Force to investigate whether presumptive remedies would help to expedite cleanup at a lower cost. (Cleanup costs for one disposal site alone are estimated at \$67 billion.). An alternate approach to lowering costs is the consolidation of cleanup areas across the base. Although a portion of EPA’s guidance on presumptive remedies addresses potential use at federal facilities, experience in

such applications may be limited. Project managers with information about past or current use of presumptive remedies at federal facilities are requested to contact Kistner (415-972-3004).

Contaminated Sediments Guidance

Judith McCulley (Region 8) reported that EPA is incorporating public comments on its draft "Contaminated Sediment Remediation Guidance for Hazardous Waste Sites," which was released on December 3, 2002. Headquarters expects to distribute the revised guidance to the regions for another review within 2-3 months. The final guidance is scheduled for publication next spring.

OB/OD at RCRA Facilities

Dave Reisman (ORD/NRMRL) updated the FFF on progress made toward addressing Region 3's request for information on munitions regulated under RCRA Subpart X. Region 3 has begun developing guidance on this issue but requires supplemental information on the impact of waste streams. Based on existing and available information, Region 3 experts have recommended that best management practices, rather than modeling, be employed for RCRA-regulated munitions. Development of appropriate models may be infeasible due to the tendency for un-reacted energetic materials to unevenly and widely disperse after combustion or to leak from the ground surface into soil, ground water, and air. The question of whether to address this problem in terms of air contamination or in the form of a complete waste stream is unclear.

DOD guidance states that OB/OD is a potential release mechanism for perchlorate, but the Corps of Engineers claims that detonation causes no contamination. EPA's perchlorate workgroup has not yet evaluated the air impacts of un-reacted energetic material. One alternative for munitions destruction is the portable blast chamber, which can be used effectively for UXO but not necessarily for residual ordnance. To address this issue without delay, Region 6 has begun requiring all RCRA Subpart X permit renewals to include ground-water monitoring results for explosives in addition to VOCs and metals, and sample analysis results for perchlorate.

Mike Overbay (Region 6) will coordinate follow-on discussions with Reisman and Harry Craig to develop a scope of work that will outline the problem and help determine the most appropriate form of regional assistance (i.e., guidance, issue paper, or statement of best management practices). The remainder of the FFF will review and comment on the proposed scope of work.

TSP Resources and Transfer of Information

Rich Steimle (TIP) discussed with the FFF the need to lower TSP resource expenditures by 25% in order to match the current reduction in the Superfund Program budget. As part of this effort, TIP and each of the TSP forums have agreed to hold a separate, condensed (2-day) meeting each spring, while continuing to hold a joint 4-day meeting each fall. TIP requests that the forums hold their spring meeting in the Midwest so that all regions would incur comparable travel costs. TIP and FFRRO will discuss the FFF's preference for holding its spring meeting in conjunction with other key organizational gatherings, regardless of location. As noted earlier, the FFF hopes to convene in May 2004 in Miami, FL, during NARPM's spring meeting.

The FFF and TIP representatives also discussed various tools for regional dissemination of information gathered during the FFF's teleconferences and meetings. Potential tools include electronic summaries, brown-bag discussions, personal communications, RPM meetings, broad-based distribution of monthly teleconference agendas, meeting minute distribution, management meetings, federal facility-specific meetings, cross-program cleanup meetings, and followup at federal facilities. The FFF also holds the

unique responsibility of supporting FFRRO and the FFLC, which requires additional mechanisms for information sharing.

Solvent Stabilizers as Emerging Contaminants of Concern

Scott Marquess (Region 7) provided an overview of potential problems caused by 1,4-dioxane, an emerging chemical of concern. The chemical is one of a group of compounds that are routinely added to industrial solvents in order to improve degreasing applications. The additives mitigate or prevent reactions with water, acids, and metals, and inhibit degradation from heat, light, and oxygen. Several solvent stabilizers are problematic in site cleanup due to their toxicity, persistence, volume, and tendency to concentrate. Recent literature and field information suggest that 1,4-dioxane contamination may be considerably more widespread than previously suspected. Unlike perchlorate, another emerging chemical, 1,4-dioxane contamination is not unique to the military sector. For consideration by the FFF and potential elevation to FFRRO, Glenn Kistner will distribute a list of emerging contaminants identified by the State of California.

GPRA Measures and Cleanup Streamlining

Tracey Seymour reported that a meeting among EPA, DOD, and DOE was planned for earlier this year to discuss joint performance measures under the Government Performance and Results Act (GPRA). The meeting was postponed, however, due to operational changes undertaken by the Agency to implement the OCP. FFRRO anticipates that the meeting will be held in mid 2004. As part of its effort to streamline site cleanup, DOD will proceed with an installation survey for the purpose of identifying best management practices. DOD also plans to begin using an exception reporting process whereby the department will provide to EPA periodic reports outlining ROD and remedy schedules. FFRRO then will have an opportunity to return to DOD a listing of any major discrepancies from previous agreements.

FFF Meeting Summary

The FFF agreed to complete and/or pursue the following major work products:

- A needs statement regarding protocols for field sampling of perchlorate; the draft statement was revised to reflect internal comments and will be forwarded to Stan Zawistowsky (Region 8) for final comment prior to submission to ORD; and
- Permitting guidance to address OB/OD contamination; Mike Overbay and Harry Craig will work with ORD to identify the content and format of material to be developed.

The FFF reviewed the meeting's action items (with associated lead personnel and schedules):

- Distribute the Army guidance on fixed-price contracting (*Steve Hirsh, November 7*);
- Review and comment on the ASTSWMO BRAC paper (*all FFF members, November 14*);
- Work with Sally Dalzell and Murray Newton (FFRRO) to resolve inconsistent regional FOIA responses (*Scott Marquess, Mike Overbay, Gene Jablonowski, November 7*);
- Update the FFF on development of FOST language concerning asbestos (*Jim Woolford, December 13*);
- Add all FFF members to the distribution list for FFLC updates (*Jim Woolford, October 31*);
- Coordinate a teleconference among Region 6, Region 3, and ORD to discuss development of OB/OD best management practices (*Mike Overbay, November 30*);
- Ensure that the perchlorate needs statement meets the needs of Region 8 (*Jim Kiefer, Judith McCulley, October 31*);
- Submit the perchlorate needs statement to ORD (*Chris Villarreal, November 30*);
- Distribute to the FFF a listing of California's emerging chemicals (*Glenn Kistner, November 7*);

- Provide to Region 9 an example of federal facility RODs employing presumptive remedies (*Stacie Driscoll, November 7*);
- Incorporate members' changes to the FFF's list of issues, accomplishments, and points of contact (*Scott Marquess, November 13*);
- Coordinate a meeting between FFRRO and TIP to discuss logistics for the FFF's spring meeting (*Tracey Seymour, Rich Steimle, December 31*); and
- Review regional and state lists of FFF members, as listed on the TSP web site (www.epa.gov/tio/tsp), to ensure consistency with completed participation agreements (*all FFF members, November 13*).

Topics for discussion during the FFF's next monthly teleconference tentatively include:

- Followup to the Fall 2003 TSP meeting action items;
- Confirmation of members' updates to the FFF's list of issues, accomplishments, and points of contact;
- Recent developments in the Agency's efforts to streamline site cleanup;
- Update on the FOST language regarding asbestos;
- TCE/vapor intrusion update from Henry Schuver (OSWER);
- New sampling techniques used in Region 3;
- Status of the FFF participation list;
- Update on the FFF's spring meeting; and
- Plans for the Fall 2004 TSP meeting.

Innovation Technology Evaluation Program Review

Jay Clausen, AMEC Earth and Environmental, provided an overview of the Innovative Technology Evaluation (ITE) efforts to address explosives-contaminated soil at Camp Edwards on the Massachusetts Military Reservation (MMR). As part of MMR's Impact Area Groundwater Study Program, the ITE team is tasked with helping the Army Environmental Center to identify and evaluate innovative remediation technologies for low levels of explosives, to recommend cleanup technologies for Camp Edwards, and to support technology applications at other DOD training installations. Early field studies showed a significant reduction in the volume of explosives at Camp Edwards as a result of soil washing. Other studies conducted at a bench scale indicated success in the use of chemical reduction (based on zero valent iron), solid phase bioremediation, bioslurry, and low temperature thermal desorption/destruction. Technologies more recently implemented for both explosives and perchlorate removal include a biological fluidized bed reactor, granular activated carbon, and ion exchange resins.

To view Mr. Clausen's presentation materials for details, [click here](#).

ENGINEERING FORUM

RPM Expertise Questionnaire

In an effort to inventory and assess the current engineering resources available to RPMs and other professional staff, the EF decided to move forward with a proposal to distribute a questionnaire to Superfund RPMs. Mike Gill (Region 9 HSTL) and Karen Mason-Smith (Region 5) presented members with a draft questionnaire and solicited input. The purpose of the questionnaire is to determine the level of existing engineering expertise in each Region, and to compare these findings to the current and projected future engineering needs of the Agency. Regional EF representatives will be responsible for distributing the questionnaire to RPMs and compiling the data. Ultimately, the data for each Region will be condensed into a comprehensive summary report detailing the state of the Agency's engineering resources, and will be forwarded, along with analysis and recommendations, to senior management. Hopefully, management will recognize that RPMs' need for engineering expertise and training is growing, and will take steps to increase resources in this area.

The National Association of Remedial Project Managers (NARPM) has expressed interest in supporting this survey, particularly as it relates to ensuring that adequate engineering resources and training opportunities are in place to assist RPMs with engineering concerns at their sites. Some EF members were concerned that including NARPM in the finalization process could delay the roll out of the questionnaire by up to 6 months, but members agreed that having NARPM co-sponsor the questionnaire will lend credence to the project and may increase the response rate. Julie Santiago (Region 4) will present the final survey to NARPM co-chairs for review and approval once the EF has submitted comments on the draft. NARPM will be given a firm deadline, not to exceed 3 weeks, for responding with comments once the questionnaire is presented to them.

Several EF members provided comments to Mike and Karen during the business session, but were asked to send their comments via email when they returned to the office. Dave Reisman (NRMRL-Cinc.) suggested that an introductory section providing some background information on the EF and NARPM be added to the questionnaire. It was also suggested that Mike and Karen investigate ORD's Biosketch database to see how it is organized. Steve Kinser (Region 7) and Kelly Madalinski (OSRTI) noted that questions addressing construction management and O&M experience should be included. Dave Reisman said that question 8 needs to be redrafted because it is open ended. Most EF members agreed that the survey should be renamed the "RPM Expertise Questionnaire" to maximize the response rate from non-engineers. Gene Keepper (Region 6) recommend that some questions be tailored to accommodate responses from RPMs classified as "Environmental Protection Specialists." Mark Granger (Region 2), Karen Mason-Smith, Steve Kinser, and Harry Ball (Region 9) volunteered to distribute the questionnaire to RPMs in their Regions. One representative from each of the remaining Regions is needed to distribute the survey; interested members should contact Mike, Karen, or one of the co-chairs.

Action Items:

- Mike Gill and Karen Mason-Smith will incorporate all comments received by EF members before the November EF teleconference into the questionnaire and will send a draft final version to the Forum.
- Julie Santiago will present the draft final to NARPM and will ask for comments within two weeks.
- Forum representatives from each Region will be asked to distribute the survey once it is completed.

Remedial Process Characterization Screening Data Collection Guidance

Ed Mead (U.S. Army Corps of Engineers) presented his latest effort on the Remedial Process Characterization Screening Data Collection Guidance. He ask the EF for comments and requested feedback based on pilot field application.

Outreach Efforts

Bill Rothenmeyer led a discussion on outreach approaches to better communicate information learned the EF to RPMs. Suggestions included distributing copies of the monthly EF teleconference minutes as well as the summaries of the biannual TSP meeting. EF members also solicit technical topics of concern from RPMs for discussion during the teleconferences and invite the RPMs to participate. As an RPM, Gary Miller (Region 6) commented that the *Highlights* newsletter that is distributed following the meetings is helpful for quickly identifying topics of interest discussed at the biannual meeting. He scans the highlights and then refers to the meeting summary for details on the topics that interest him. Gary recommended that the forums continue the newsletter. All EF members are encouraged to continue and expand their outreach efforts in their regions.

Updating the RD/RA Handbook

Steve Kinser (Region 7) noted that, although not much has been done in response to the EF decision to update the remedial design/remedial action (RD/RA) handbook, he is still committed and would like to move forward with the project. He suggested that the EF spend a half day scoping out the project at the spring mini-meeting. The concept is still to redraft the handbook to include RCRA Corrective Action so that it better conforms to the goals of One Cleanup Program. In addition, the updated electronic copy of the document would contain hyperlinks that direct the user to definitions, tools, references, and other information. The model for the updated RD/RA handbook is *Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action*, which Gene Keepper can send to any interested EF members.

One major impediment to this update has been the inability to secure funding. EF members can rewrite a significant portion of the document, but contractor support will be necessary to finalize it and prepare the electronic version. Steve suggested scanning the original handbook so that it can be manipulated electronically. He committed to drafting an introduction and updating the first chapter. Kelly Madalinski noted that John Smith (OSRTI) and Richard Jeng (OSRTI) at Headquarters might be doing a similar project. Kelly will contact them to see if they are interested in funding this update. Steve, Mark Granger, Fran Costanzi (Region 8), Gene Keepper, and Gary Miller (Region 6) expressed interest in continuing this project.

Action Items:

- Steve Kinser will begin drafting an introduction and updating the first chapter of the RD/RA handbook.
- Kelly Madalinski will contact Richard Jeng and John Smith to see if they are interested in funding the updating of the RD/RA handbook.

Engineering Bulletins

Dave Reisman (NRMRL-Cincinnati) announced that the Office of Research and Development (ORD) is updating remediation technology engineering bulletins. A draft bulletin on in-situ bioremediation will be ready for review in January 2004. Dave requested that the Engineering Forum participate in the review. Also, Dave requested input in the topics for future bulletins, and the topic of in-situ thermal

technologies was proposed. Another topic proposed was preparing standard operating procedures for the operation and maintenance of different technologies.

Evergreen List of Technical Topics

Mark Granger revised the Evergreen List prior to the meeting and distributed copies to all EF members for review and comment. He changed the ranking criteria to “high,” “medium,” and “low,” and created a new category called “in progress.” Mark added explanatory text after several topics, but many remain ambiguous. The EF went through the list, reprioritizing some topics and eliminating others that are outdated or for which work is already being undertaken by another office. Mark took note of all the changes and will update the list before distributing it to EF members after the meeting.

Dave Reisman recommended that additional topics for future engineering bulletins be selected from the list. Mark Granger suggested that ORD consider preparing a series of SOPs for O&M reporting relating to different technologies, such as permeable reactive barriers. Ed Mead (USACE) noted that USACE has prepared SOPs in the past and may be interested in partnering with the EF.

In addition, EF members decided that they would like ORD to update the outdated SVE Engineering Bulletin to include new technologies. Tony Holoska (Region 5) volunteered to take the lead on this project.

Action Items:

- Bill Rothenmeyer (Region 8) will prepare a list of all available technologies and will send the list to EF members for ranking. Bill will compile the rankings and send the names of the top few technologies to Dave for consideration.
- Tony Holoska will take the lead on updating the SVE Engineering Bulletin to include new technologies.

EF Expertise Contact List

Mark Granger distributed a draft version of the EF expertise list and asked for comments. He eventually would like to print the list on a folded color brochure. EF members liked the format of the draft and suggested using the text in the background information section of the contact list in the introductory section of the RPM Expertise Questionnaire. Mark asked EF members to review the contact list and send him any edits.

Action Items:

- Bill Rothenmeyer will distribute the original survey to new EF members so they can complete it and return it to Mark.
- EF members will review the contact list and send any comments to Mark Granger.

Spring 2004 TSP Meeting

OSRTI has decided to shorten the length of one of the semi-annual meetings from 5 days to 3. The upcoming spring meeting will focus primarily on business sessions and will not involve coordinated joint sessions or field trips. Some forums may choose not to meet at all, depending on work load. Headquarters will be responsible for locating and timing the shorter meeting. Kelly Madalinski said that OSRTI would like the short meetings to be held at locations in the central U.S. to reduce travel expenses from the east and west coasts. TIP will continue to cover the costs of lodging up to a maximum of 3 nights per person. Lessening the duration of the second meeting will ultimately reduce the planning burden on the forums, lower costs, and encourage the use of other tools to share and

exchange information. Kelly indicated that the Federal Facilities Forum has expressed interest in holding their meeting in conjunction with the NARPM meeting in Miami. EF members agreed that they did not want to meet in Miami with NARPM, and suggested Austin, Texas, as a possible location. Gene Keeper will look into the possibility of holding the spring meeting in Austin, and will send a pitch to Rich Steimle (OSRTI) and Kelly Madalinski. The fall 2004 semi-annual meeting, to be planned by the Federal Facilities Forum, will be a longer meeting and will involve joint sessions, field trips, technical sessions, and, if appropriate, training or workshops.

Action Item:

- Gene Keeper will investigate the possibility of holding the spring 2004 mini-meeting in Austin and will forward a pitch to Rich Steimle and Kelly Madalinski.

Technical Topics for EF Teleconferences

Bill Rothenmeyer and Gene Keeper reminded EF members that the primary purpose of the monthly teleconferences is to transfer technical information and assist RPMs who have technical questions. In recent months, few members have submitted technical topics to the co-chairs for inclusion on the teleconference agendas. EF members are encouraged to solicit technical questions relating to engineering topics for the monthly calls. Julia Santiago said that she would like to address elevated arsenic and lead levels near railroad tracks during the next teleconference.

Action Items:

- The co-chairs will include arsenic and lead contamination near railroad tracks on the next teleconference agenda.
- EF members will solicit technical topics from RPMs.

PARTICIPANTS LIST FALL 2003 TSP MEETING

Robert Alvey

U.S. EPA, Region 2
290 Broadway
New York, NY 10007-1866
Phone: (212) 637-3258
Fax: (212) 637-4360
alvey.robert@epa.gov

Alton Anderson

U.S. Geological Survey
aanders@usgs.gov

Keith Arnold

EMS, Inc.
8601 Georgia Ave., Suite 500
Silver Spring, MD 20910
Phone: (301) 589-5318
Fax: (301) 589-8487
keith.arnold@emsus.com

Jean Balent

U.S. EPA, OSRTI
Mailcode: 5102-G
1200 Pennsylvania Ave., NW
Washington, DC 20460
Phone: (703) 603-9924
Fax: (703) 603-9135
balent.jean@epa.gov

Harold Ball

U.S. EPA, Region 9
Mailcode: SFD-8B
75 Hawthorne St.
San Francisco, CA 94105
Phone: (415) 972-3047
Fax: (415) 947-3518
ball.harold@epa.gov

Thomas Ballestero

Bedrock Bioremediation Center
University of New Hampshire
Environmental Technology Bldg.
35 Colovos Rd.
Durham, NH 03824
Phone: (603) 862-1405

tom.ballestero@unh.edu

Felicia Barnett

U.S. EPA, Region 4
61 Forsyth St., SW
Atlanta, GA 30303-3415
Phone: (404) 562-8659
Fax: (404) 562-8627
barnett.felicia@epa.gov

Mike Basile

EPA Niagara Falls Information
Office
345 Third St., Suite 530
Niagara Falls, NY 14303
Phone: 716-285-8842
basile.michael@epa.gov

Ben Bentkowski

Gannett-Fleming
230 Peachtree St., NW
Suite 2750
Atlanta, GA 30303
Phone: (404) 522-1381
Fax: (404) 522-1383
jbentkowski@gfnet.com

Martha Berry

U.S. EPA, Region 4
61 Forsyth St., SW
Atlanta, GA 30303-3415
Phone: (404) 562-8533
Fax: (404) 562-8518
berry.martha@epa.gov

Curt Black

U.S. EPA, Region 10
Mailcode: OEA-095
1200 Sixth Ave.
Seattle, WA 98101
Phone: (206) 553-1262
Fax: (206) 553-0119
black.curt@epa.gov

Kenneth Bradbury

Wisconsin Geological and
Natural History Survey
3817 Mineral Point Rd.
Madison, WI 53705
Phone: (608) 263-7921
krbradbu@facstaff.wisc.edu

Bill Brandon

U.S. EPA, Region 1
Mailcode: HBT/OSRR
1 Congress St., Suite 1100
Boston, MA 02114-2023
Phone: (617) 918-1391
Fax: (617) 918-1294
brandon.bill@epa.gov

Glenn Bruck

U.S. EPA, Region 9
Mailcode: SFD-08
75 Hawthorne St.
San Francisco, CA 94105
Phone: (415) 972-3060
bruck.glenn@epa.gov

Dave Burden

U.S. EPA, Ground Water and
Ecosystems Restoration Division
P.O. Box 1198
Ada, OK 74820
Phone: (580) 436-8606
Fax: (580) 436-8614
burden.david@epa.gov

Don Bussey

U.S. EPA, Environmental
Response Team
4220 S. Maryland Pkwy.,
Bldg. D, Suite 800
Las Vegas, NV 89119
Phone: (702) 784-8016
Fax: (702) 784-8001
bussey.don@epa.gov

Judy Canova

South Carolina Dept. of Health
and Environmental Control
2600 Bull St.
Columbia, SC 29201
Phone: (803) 896-4046
Fax: (803) 896-4292
canovajl@dhec.sc.gov

Jay Clausen

AMEC
239 Littleton Road, Suite 1B
Westford, MA 01886
Phone: (978) 692-9090
Fax: (978) 692-9085
Jay.Clausen@amec.com

Harry Craig

U.S. EPA, Region 10/Oregon
Operations Office
Mailcode: OOO
811 SW 6th Ave.
Portland, OR 97204
Phone: (503) 326-3689
Fax: (503) 326-3399
craig.harry@epa.gov

Andy Crossland

U.S. EPA, Region 2
290 Broadway
New York, NY 10007-1866
Phone: (212) 637-4436
Fax: (212) 637-4360
crossland.andy@epa.gov

Kathy Davies

U.S. EPA, Region 3
Mailcode: 3HS41
1650 Arch St.
Philadelphia, PA 19103
Phone: (215) 814-3315
Fax: (215) 814-3015
davies.kathy@epa.gov

Diane Dopkin

EMS, Inc.
8601 Georgia Ave., Suite 500
Silver Spring, MD 20910
Phone: (301) 589-5318

Fax: (301) 589-8487
diane.dopkin@emsus.com

Stacie Driscoll

U.S. EPA, Region 3
Mailcode: 3HS13
1650 Arch St.
Philadelphia, PA 19103-2029
Phone: (215) 814-3368
Fax: (215) 814-3051
driscoll.stacie@epa.gov

David Eckhardt

U.S. Geological Survey
30 Brown Rd.
Ithaca, NY 14850-1573
Phone: 607-266-0217, ext. 3018
Fax: 607-266-0521
daeckar@usgs.gov

Kevin Farrar

New York State DEC
Hudson River Unit
Division of Environmental
Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7010
Phone: (518) 402-9676
Fax: (518) 402-9020
kxfarrar@gw.dec.state.ny.us

René Fuentes

U.S. EPA, Region 10
Mailcode: OEA-095
1200 Sixth Ave.
Seattle, WA 98101
Phone: (206) 553-1599
Fax: (206) 553-0119
fuentes.rene@epa.gov

Michael Gill

U.S. EPA, Region 9
Mailcode: SFD-8B
75 Hawthorne St.
San Francisco, CA 94105
Phone: (415) 972-3054
Fax: (415) 947-3520
gill.michael@epa.gov

Mark Granger

U.S. EPA, Region 2
290 Broadway, 20th Floor
New York, NY 10007-1866
Phone: (212) 637-3351
Fax: (212) 637-4284
granger.mark@epa.gov

Steve Hirsh

U.S. EPA, Region 3
Mailcode: 3HS13
1650 Arch St.
Philadelphia, PA 19103-2029
Phone: (215) 814-3352
Fax: (215) 814-3051
hirsh.steven@epa.gov

Tony Holoska

U.S. EPA, Region 5
Mailcode: SRT-4J
77 W. Jackson Blvd.
Chicago, IL 60604-3507
Phone: (312) 886-7503
holoska.anthony@epa.gov

Scott Honig

State of Missouri Department of
National Resources
500 NE Colbern Rd.
Lee's Summit, MO 64086
Phone: (816) 622-7011
Fax: (816) 622-7044
nrhonis@mail.dnr.state.mo.us

Kelly Hurt

Dynamac
3601 Oakridge Blvd.
Ada, OK 74820
Phone: (580) 436-5740
Fax: (580) 436-6494
khurt@dynamac.com

Paul Ingrisano

U.S. EPA, Region 2
290 Broadway, 18th Floor
New York, NY 10007-1866
Phone: (212) 637-4337
Fax: (212) 637-3256
ingrisano.paul@epa.gov

Ruth Izraeli

U.S. EPA, Region 2
290 Broadway, 24th Floor
New York, NY 10007-1866
Phone: (212) 637-3784
Fax: (212) 637-3889
izraeli.ruth@epa.gov

Gene Jablonowski

U.S. EPA, Region 5
Mailcode: SR-6J
77 W. Jackson St.
Chicago, IL 60604
Phone: (312) 886-4591
Fax: (312) 353-8426
jablonowski.eugene@epa.gov

Carole Johnson

U.S. Geological Survey
11 Sherman Place
Storrs, CT 06269
Phone: (860) 487-7402
Fax: (860) 487-8802
cjohnson@usgs.gov

Jeff Johnson

U.S. EPA, Region 7
901 N. 5th St.
Kansas City, Kansas 66101
Phone: (913) 551-7849
Fax: (913) 551-9849
johnson.jeff@epa.gov

Bill Kappel

U.S. Geological Survey
30 Brown Rd.
Ithaca, NY 14850-1573
Phone: (607) 266-0217 ext 3013
Fax: (607) 266-0521
wkappel@usgs.gov

Gene Keepper

U.S. EPA, Region 6
Mailcode: 6EN-HX
1445 Ross Ave., Suite 900
Dallas, TX 75202-2733
Phone: (214) 665-2280
Fax: (214) 665-7264
keepper.gene@epa.gov

Kaushalya Khanna

U.S. EPA, Region 5
Mailcode: SE-5J
77 West Jackson Blvd.
Chicago, IL 60604-3507
Phone: (312) 353-2663
Fax: (312) 886-0753
khanna.kaushalya@epa.gov

Jim Kiefer

U.S. EPA, Region 8
Mailcode: 8EPR-F
999 18th St., Suite 300
Denver, CO 80202-2466
Phone: (303) 312-6907
Fax: (303) 312-6067
kiefer.jim@epa.gov

Nancy Kinner

Bedrock Bioremediation Center
University of New Hampshire
Environmental Technology
Building
35 Colovos Rd.
Durham, NH 03824
Phone: (603) 862-1422
Fax: (603) 862-3957
nancy.kinner@unh.edu

Steve Kinser

U.S. EPA, Region 7
901 N. 5th St.
Kansas City, KS 66101
Phone: (913) 551-7728
Fax: (913) 551-9728
kinser.steven@epa.gov

Glenn Kistner

U.S. EPA, Region 9
Mailcode: SFD-8-1
75 Hawthorne St.
San Francisco, CA 94105
Phone: (415) 972-3004
Fax: (415) 744-1916
kistner.glenn@epa.gov

Mark Kluger

Dajak, LLC
7 Red Oak Rd.

Wilmington, DE 19806
Phone: (302) 655-6651
Fax: (302) 655-0912
mkluger@dajak.com

Bernie Kueper

Queen's University
Department of Civil Engineering
Kingston, Ontario, Canada K7L
3N6
Phone: (613) 533-6834
Fax: (613) 533-2128
kueper@civil.queensu.ca

Norm Kulujian

U.S. EPA, Region 3
Mailcode: 3HS00
1650 Arch St.
Philadelphia, PA 19103-2029
Phone: (215) 814-3130
Fax: (215) 814-3015
kulujian.norm@epa.gov

Pierre Lacombe

U.S. Geological Survey
810 Bear Tavern Rd.
West Trenton, NJ 08518
Phone: (609) 771-3942
Fax: (609) 771-3915
placombe@usgs.gov

Ken Lovelace

U.S. EPA
Mailcode: 5202G
1200 Pennsylvania Ave., NW
Washington, DC 20460
Phone: (703) 603-8787
Fax: (703) 603-9133
lovelace.kenneth@epa.gov

Forest Lyford

U.S. Geological Survey
10 Bearfoot Rd.
Northboro, MA 01532
Phone: (508) 490-5024
flyford@usgs.gov

Greg Lyssy

U.S. EPA, Region 6
Mailcode: 6PD-F
1445 Ross Ave., Suite 1200
Dallas, TX 75202
Phone: (214) 665-8317
Fax: (214) 665-6660
lyssy.gregory@epa.gov

Kelly Madalinski

U.S. EPA/OSRTI
Mailcode: 5102G
1200 Pennsylvania Ave., NW
Washington, DC 20460
Phone: (703) 603-9901
Fax: (703) 603-9135
madalinski.kelly@epa.gov

Frank Magdich

949 Ninth St, Suite 1480
Sacramento, CA 95814
Phone: (916) 290-3200
fmagdich@slb.com

John Malleck

U.S. EPA, Region 2
Mailcode: ERRD-NYRB
290 Broadway
New York, NY 10007
Phone: (212) 637-4263
malleck.john@epa.gov

Vince Malott

U.S. EPA, Region 6
Mailcode: 6SF-AP
1445 Ross Ave.
Dallas, TX 75202
Phone: (214) 665-8313
Fax: (214) 665-6660
malott.vincent@epa.gov

Steve Mangion

U.S. EPA, Region 1
Mailcode: HBS
1 Congress St., Suite 1100
Boston, MA 02114
Phone: (617) 918-1452
Fax: (617) 918-1291
mangion.steve@epa.gov

Scott Marquess

U.S. EPA, Region 7
Mailcode: FFSE/SUPR
901 N. 5th St.
Kansas City, KS 66101
Phone: (913) 551-7131
Fax: (913) 551-7063
marquess.scott@epa.gov

Karen Mason-Smith

U.S. EPA, Region 5
Mailcode: SR-6J
77 W. Jackson Blvd
Chicago, IL 60604
Phone: (312) 886-6150
Fax: (312) 353-8426
mason-smith.karen@epa.gov

Bob Masters

National Ground Water
Association
601 Dempsey Rd
Westerville, OH 43081
rmasters@ngwa.org

Judith McCulley

U.S. EPA, Region 8
Mailcode: 8EPR-F
999 18th St.
Denver, CO 80202
Phone: (303) 312-6667
Fax: (303) 312-6067
mcculley.judith@epa.gov

Ed Mead

U.S. Army Corps of Engineers
Mailcode: CENWO-HX-G
12565 West Center Rd.
Omaha, NE 68144
Phone: (402) 697-2576
Fax: (402) 697-2595
s.ed.mead@usace.army.mil

Gary Miller

U.S. EPA, Region 6
Mailcode: 6PD-F
1445 Ross Ave.
Dallas, TX 75202
Phone: (214) 665-8306

Fax: (214) 665-7263
miller.gary@epa.gov

Bill Myers

EMS, Inc.
8601 Georgia Ave., Suite 500
Silver Spring, MD 20910
Phone: (301) 589-5318
Fax: (301) 589-8487
bmyers@emsus.com

Kent Novakowski

Queen's University
Department of Civil Engineering
Ellis Hall
Kingston, Ontario, Canada K7L
3N6
Phone: (613) 553-6417
Fax: (613) 553-2128
kent@civil.queensu.ca

Sandra Novotny

EMS, Inc.
8601 Georgia Ave., Suite 500
Silver Spring, MD 20910
Phone: (301) 589-5318
Fax: (301) 589-8487
snovotny@emsus.com

Howard Orlean

U.S. EPA, Region 10
Mailcode: WCM-121
1200 Sixth Avenue
Seattle, WA 98101
Phone: (206) 553-2851
Fax: (206) 553-0869
orlean.howard@epa.gov

Michael Overbay

U.S. EPA, Region 6
Mailcode: 6PD-NB
1445 Ross Ave., Suite 1200
Dallas, TX 75202-2733
Phone: 214-665-6482
overbay.michael@epa.gov

John Quander

U.S. EPA, OSRTI
Mailcode: 5102G
1200 Pennsylvania Ave., NW
Washington, DC 20460
Phone: (703) 603-7198
quander.john@epa.gov

David Reisman

U.S. EPA/NRMRL
Mailcode: MS-489
26 West Martin Luther King Dr.
Cincinnati, OH 45268
Phone: (513) 569-7588
Fax: (513) 569-7676
reisman.david@epa.gov

Leo Romanowski

U.S. EPA, Region 4
61 Forsyth St., SW
Atlanta, GA 30303
Phone: (404) 562-8485
Fax: (404) 562-8439
romanowski.leo@epa.gov

Bill Rothenmeyer

U.S. EPA, Region 8
Mailcode: 8P2-HW
999 18th St., Suite 300
Denver, CO 80202-2466
Phone: (303) 312-6045
Fax: (303) 312-6064
rothenmeyer.william@epa.gov

Ellen Rubin

Mailcode: 5102G
1200 Pennsylvania Ave NW
Washington, DC 20460
Phone: (703) 603-0141
rubin.ellen@epa.gov

Tony Runkel

Minnesota Geological Survey
2642 University Ave. W
St. Paul, MN 55114-1057
Phone: (612) 627-4780, ext. 222
Fax: (612) 627-4778
runke001@umn.edu

Bernard Schorle

U.S. EPA, Region 5
Mailcode: SR-6J
77 W. Jackson Blvd.
Chicago, IL 60604
Phone: (312) 886-4746
schorle.bernard@epa.gov

Tracey Seymour

Mailcode: 5106G
1200 Pennsylvania Ave NW
Washington, DC 20460
Phone: (703) 603-8712
Fax: (703) 603-0043
seymour.tracey@epa.gov

Allen Shapiro

U.S. Geological Survey
Mail Stop 431
Reston, VA 22066
Phone: (703) 648-5884
Fax: (703) 648-5274
ashapiro@usgs.gov

Rich Steimle

U.S. EPA, OSRTI
Mailcode: 5102G
1200 Pennsylvania Ave., NW
Washington, DC 20460
Phone: (703) 603-7195
Fax: (703) 603-9115
steimle.richard@epa.gov

Luanne Vanderpool

U.S. EPA, Region 5
Mailcode: SR-5J
77 W. Jackson Blvd.
Chicago, IL 60604
Phone: (312) 353-9296
Fax: (312) 886-4071
vanderpool.luanne@epa.gov

Barb Vetort-Tiffany

Michigan Department of
Environmental Quality/ESD
P.O. Box 30426
Lansing, MI 48909-7926
Phone: (517) 335-1807
Fax: (517) 373-2673

vetortb@state.mi.us

Chris Villarreal

U.S. EPA, Region 6
Mailcode: 6SF-AP
1445 Ross Ave., Suite 1200
Dallas, TX 75202-2733
Phone: (214) 665-6758
Fax: (214) 665-6660
villarreal.chris@epa.gov

Stephen White

U.S. Army Corps of Engineers
12565 West Center Rd.
Omaha, NE 68144
Phone: (402) 697-2660
Fax: (402) 697-2613
stephen.j.white@nwd02.usace.army.mil

Richard Willey

U.S. EPA, Region 1
Mailcode: HBS
1 Congress St., Suite 1100
Boston, MA 02114-2023
Phone: (617) 918-1266
Fax: (617) 918-1291
willey.dick@epa.gov

Carrie Williams

GeoSyntec Consultants
1100 Lake Hearn Dr., Suite 200
Atlanta, GA 30342-1523
Phone: (404) 705-9500
Fax: (404) 705-9400
cwilliams@geosyntec.com

Christine Williams

U.S. EPA, Region 1
Mailcode: HBT
1 Congress St, Suite 1100
Boston, MA 02114-2023
Phone: (617) 918-1384
Fax: (617) 918-1291
williams.christine@epa.gov

John Williams

U.S. Geological Survey
425 Jordan Rd
Troy, NY 12180
Phone: (518) 285-5670
Fax: (518) 285-5601
jhwillia@usgs.gov

Jonathan Williams

U.S. EPA, Region 10
Mailcode: ECH-111
1200 Sixth Ave
Seattle, WA 98101
Phone: (206) 553-1369
williams.jonathan@epa.gov

Kevin Willis

U.S. EPA, Region 2
Mailcode:
ERRD/NYRB/ENYRS
290 Broadway
New York, NY 10007-1866
Phone: (212) 637-4252
Fax: (212) 637-3966
willis.kevin@epa.gov

Kay Wischkaemper

U.S. EPA, Region 4
Mailcode: TSS
61 Forsyth St.
Atlanta, GA 30303-3415
Phone: (404) 562-8641
Fax: (404) 562-8566
wischkaemper.kay@epa.gov

James Woolford

U.S. EPA, FFRRO
Mailcode: 5106G
1200 Pennsylvania Ave, NW
Washington, DC 20460
Phone: (703) 603-9089
woolford.james@epa.gov

Richard Yager

U.S. Geological Survey
30 Brown Rd
Ithaca, NY 14850
Phone: (607) 266-0217
Fax: (607) 266-0521
ryager@usgs.gov

Dino Zack

Earth Tech/TAMS
100 Corporate Parkway
Amherst, NY 14226
Phone: (716) 836-4506
dino.zack@earthtech.com

Bernie Zavala

U.S. EPA, Region 10
Mailcode: OEA-095
1200 Sixth Ave.
Seattle, WA 98101
Phone: (206) 553-1562
Fax: (206) 553-0119
zavala.bernie@epa.gov

Tom Zondlo

Shaw Environmental &
Infrastructure, Inc.
312 Directors Dr.
Knoxville, TN 37923
Phone: (865) 692-3633
Fax: (865) 690-3626
tom.zondlo@shawgrp.com